

## ABSTRACT

The invention concerns a bidirectional actuator comprising at least a stator structure excited by an electric coil, and a mobile magnet in a main gap, the stator structure consists of two pairs of stator poles (1 to 4), each of the pairs of poles being enclosed by at least an electric coil, the stator structure defining at least a first auxiliary gap (6, 8) for the displacement of the mobile magnet (14) relatively to a first degree of freedom, and a second auxiliary gap (7, 9) for the displacement of the magnet (14) relatively to a second degree of freedom.